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# Corneal Refractive Surgery Considerations in Patients with Anorexia Nervosa

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**Abstract:** Anorexia nervosa (AN) is a psychiatric eating disorder characterized by body mass index (BMI) ≤ 18.5, fear of gaining weight, and a distorted perception of body weight. With increasing rates of myopia, there is a population of patients who concurrently develop AN and may seek corneal refractive surgery. This study reviews the ophthalmic manifestations of AN and provides preliminary guidelines for patients with AN undergoing corneal refractive surgery. The literature search was conducted through the PubMed, Scopus, and Ovid databases through June 2, 2024, for publications detailing the ocular manifestations of AN. These findings were then considered in the context of potential complications after corneal refractive surgery, and preoperative guidelines for patients with AN were formulated. Twelve articles described a total of 114 patients with AN (227 eyes) with ophthalmic manifestations. Among the studied eyes, 14% had ocular surface abnormalities, 5% had cataracts/visual disturbances, 64% had posterior segment abnormalities, and 20% had orbital/neurological abnormalities. Various ophthalmic findings of AN may increase the risk of delayed corneal wound healing, ocular surface dryness, perioperative bleeding, flap-related complications, and poor visual outcomes after corneal refractive surgery. The BMI of patients suspected with AN must be assessed, and patients should be screened for diagnosis of AN. If mildly and moderately underweight patients with AN have normal ophthalmic and medical workups, they may proceed with a typical preoperative workup for corneal refractive surgery. Ultimately, the decision to recommend elective corneal refractive surgery for these patients rests with the surgeon. This study should be considered a foundation for future research, encouraging collaboration across medical disciplines to develop more comprehensive guidelines for managing this patient population.

**Keywords:** ophthalmic manifestation, guidelines, eating disorder, LASIK, PRK, SMILE

## Introduction

Eating disorders are psychiatric illnesses that exist across all genders, ethnicities, and age groups, with 5.5 to 17.9% of young women and 0.6 to 2.4% of young men experiencing an eating disorder classified by the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) by early adulthood.[1] One of the more common types of eating disorders, anorexia nervosa (AN)[1] is characterized by body mass index (BMI) ≤ 18.5, intense fear of gaining weight, and a distorted perception of body weight.[2] AN is categorized into two subtypes: restrictive and binge–purge. In the restrictive subtype, patients severely restrict the amount of food they consume; in the binge–purge subtype, patients restrict their food intake in addition to having binge–purge episodes in which they eat large amounts of food in a short period of time, followed by vomiting or the use of laxatives to expel the food previously ingested food.[2] Both types of AN can cause nutritional deficiencies and affect several functions of the body, such as delayed wound healing and acrocyanosis.[3]

Refractive errors such as myopia, hyperopia, and astigmatism affect a large portion of the population,[4] with one study estimating that, on average, 28.3% of the world population is myopic, with a projected rise to 50% by the year 2050.[5] Of these people, approximately 10 to 15 million patients were treated with corneal refractive surgery over the last 25 years.[6] Thus, it is very likely that a population of patients who concurrently suffer from myopia and AN may seek corneal

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refractive surgeries such as Laser-Assisted In Situ Keratomileusis (LASIK), Photorefractive Keratectomy (PRK), and Small Incision Lenticule Extraction (SMILE). However, complications propagated by disorders such as AN increase the possibility of negative outcomes in such surgeries. It is important to consider these symptoms to inform patients in making the best decisions and to increase monitoring vigilance to reduce negative complications.

Currently, no literature exists regarding guidelines for patients with AN who elect to undergo corneal refractive surgery. Thus, this study synthesizes the existing literature and aims to provide an overview of the potential systemic and ophthalmic complications caused by AN that could interfere with successful surgical outcomes and to suggest pre-operative considerations for this patient population.

## Materials and Methods

A literature search on the ophthalmic manifestations of AN was conducted through June 2, 2024, using the search engines PubMed, Scopus, and Ovid with the following search term: " (anorexia) AND (ocular manifestations OR ophthalmic manifestations OR cornea OR laser-assisted in situ keratomileusis OR LASIK OR photorefractive keratectomy OR PRK small incision lenticule extraction OR SMILE) NOT (Review[Publication Type]) NOT (Systematic Review[Publication Type]) NOT (Meta-Analysis[Publication Type])". The initial literature search yielded 39 results. It should be noted that anorexia can be a symptom of many disorders; however, for the purposes of this study, only the psychiatric eating disorder anorexia nervosa was analyzed. Therefore, other conditions that could cause anorexia, such as malignancies, bariatric surgeries, and medications, were excluded. Twenty-four articles were excluded based on irrelevancy, and three articles were non-English and could not be accurately translated. Subsequently, titles and abstracts were reviewed, resulting in a final selection of 12 articles. Two independent observers (VMW and KAM) conducted the methodological process to ensure thoroughness and accuracy. These articles were compiled and formulated according to screening criteria for corneal refractive surgery. Additionally, three observed cases of AN patients that sought refractive surgery at a single tertiary refractive surgery center (Hoopes Vision, Draper, UT, USA) were reported.

## Results

A total of 114 patients (227 eyes) with ophthalmic manifestations secondary to AN were found among the 12 articles. The mean age of patients was 23 ± 4.15 years. Of the total eyes studied, 14% (32 eyes) had ocular surface abnormalities such as dry eye, ocular surface hemorrhages, and conjunctival squamous metaplasia; 5% (12 eyes) had cataracts and other visual disturbances; 64% (145 eyes) had posterior segment abnormalities such as retinal nerve fiber layer (RNFL), macular, subfoveal, and choroidal thinning; and 20% (46 eyes) had orbital/neurological abnormalities such as orbital fat edema and saccadic wave jerks.

### Ocular Surface Abnormalities

The most commonly reported ocular surface abnormality in patients with AN is dry eye (14/32 eyes). Gilbert et al observed reduced tear production in patients with AN compared to normal control patients, with the AN patients' mean Schirmer tear test value of 11.3 mm being half of that of the control group (22.4 mm).[7] Another study also noted dry, irritated eyes with photophobia in patients with AN.[8] It was observed that severe starvation caused orbital fat wasting, which resulted in a mechanical and anatomic abnormality between the surface of the eyeball and the eyelids, leading to lagophthalmos and ocular surface drying.[8] Eight eyes (out of 32 eyes) from patients with AN with ocular surface abnormalities presented with episcleral capillary aneurysms and subconjunctival hemorrhages. These manifestations occurred in patients with AN who frequently engaged in self-induced vomiting or consumed laxatives, resulting in frequent Valsalva maneuvers.[7] Ten eyes (out of 32 eyes) from patients with AN with ocular surface abnormalities presented with conjunctival squamous metaplasia on cytological examination. These observations were also observed in patients with AN and normal vitamin A levels.[7]

### Cataracts and Visual Disturbances

Posterior subcapsular cataracts (PSCs) were reported in 4 patients (8 eyes) with AN. A 30-year-old female who developed AN concurrently developed worsening vision and a rapid development of PSCs in both eyes.[9] One author

reported 3 patients aged 28 to 31 years old who developed bilateral PSCs within 1–2 years of their AN diagnosis.[10] None of these patients had any prior ocular history or predisposing factors for juvenile cataract. Nighttime photosensitivity was also reported in 4 patients (8 eyes) with AN.[7] The authors stated that this symptom did not correlate with the patients' weight loss, medications, or other concurrent ocular findings.

## Posterior Segment Abnormalities

RNFL, macular, subfoveal, and choroidal thinning were observed in 13 patients (26 eyes) with anorexia nervosa (AN), as compared to the healthy control group, when measured using optical coherence tomography (OCT) and electroretinography.[11,12] Specifically, central macular thickness was significantly thinner in the AN group (140.04 ± 14.45 μm) compared to controls (150.85 ± 16.03 μm). Similarly, the mean foveal thickness in AN patients was 140.04 μm, versus 150.85 μm in the control group. Subfoveal choroidal thickness was also reduced in the AN group (222.08 ± 10.95 μm) compared to controls (250.00 ± 45.02 μm). An additional study reported 26 patients (58 eyes) with RNFL thinning.[13] One patient (one eye) with AN developed Purtscher-like retinopathy.[14] The author noted cotton wool spots and intraretinal hemorrhages surrounding the optic disc and the macula, with fluorescein angiography showing capillary filling defects and leakage from the optic disc. However, no abnormalities were observed one month later.[14]

## Orbital/Neurological Abnormalities

Two patients (4 eyes) with AN were found to have orbital fat edema on T1-weighted MRI.[15,16] These patients underwent more than 30 kg of weight loss prior to these findings and had concurrent muscle and fat wasting throughout their bodies. Square wave jerks (SWJs) were reported in 22 patients (44 eyes) with AN.[17] It was also found that the SWJ rate in patients with AN was significantly higher than in patients without AN, and that SWJ rate was negatively correlated with anxiety.

## Observed Cases

Case 1: A 26-year-old female with moderate myopia and contact lens-induced dryness sought refractive surgery. Preop refraction was −6.00 −0.75 × 180 (OD) and −6.50 −1.00 × 170 (OS). Slit-lamp exam showed mild inferior superficial punctate keratopathy (SPK). After six weeks without contacts and using artificial tears, LASIK surgery was performed uneventfully using the FS200 femtosecond laser for flap creation and the EX500 excimer laser for ablation. The flap thickness was set at 100 microns with a diameter of 8.8 mm. An ablation zone of 6.5 mm with a 9.0 mm blend zone was used for both eyes. On postoperative day one, visual acuity was 20/20-3 (OD) and 20/20-1 (OS), with mild SPK. At one week, increased SPK and conjunctival injection led to placement of dissolvable inferior punctal plugs and more frequent lubrication. At three months, fluctuating vision and persistent dryness were noted. The patient disclosed a history of AN and was referred for psychiatric care. BMI was measured to be 16.6 (5'4", 97 lbs). At six months, dryness continued despite punctal plugs and cyclosporine, so upper plugs and topical fluorometholone were added. At one year, fluctuating visual acuity (20/30 to 20/40) and SPK persisted. She was advised to maintain a proper nutritional status under the care of her psychiatrist and nutritionist.

Case 2: A 24-year-old female with myopic astigmatism and an eight-year history of contact lens use sought refractive surgery. Preop refraction was −3.50 −1.25 × 165 (OD) and −3.50 −0.75 × 5 (OS), with mean keratometry ($K_m$) values of 43.7 and 44.1. She had a BMI of 15.5 (5'7", 99 lbs) and a history of AN, taking sertraline and venlafaxine. Slit-lamp exam showed mild SPK and conjunctival staining. The posterior segment exam was unremarkable. The patient was advised to consult a psychiatrist and nutritionist before proceeding. Despite punctal plugs, cyclosporine, and loteprednol, significant SPK persisted. Due to ongoing nutritional issues and risk of worsening ocular dryness, refractive surgery was postponed, and the patient was encouraged to stabilize her nutrition before reconsidering surgery.

Case 3: A 21-year-old female with high myopia (−3.00 D bilaterally) presented for a refractive surgery consultation. $K_m$ values were 42.1 (OD) and 41.8 (OS). She had no conjunctival staining, corneal abnormalities, or epithelial defects. Schirmer's testing showed tear production >10 mm with and without anesthesia. The patient had a history of AN and was under the care of a psychiatrist and nutritionist. Over the past two years, she had gradually gained weight, reaching a BMI of 16.5 (5'6", 102 lbs). Following discussions with her psychiatrist and nutritionist, the decision was made to

delay surgery for three months to allow further weight gain and ensure a stable nutritional status. At three months, the patient's weight had increased by 10 pounds, and her BMI had improved to 18.1 (5'6", 112 lbs). LASIK surgery was performed without complications after a complete and unremarkable ophthalmic and medical workup. The flap thickness was set at 100 microns with a diameter of 8.8 mm. An ablation zone of 6.5 mm with a 9.0 mm blend zone was used for both eyes. At the three month postoperative visit, the patient reported good lubrication and stable visual acuity of 20/25 (OD) and 20/20 (OS), with a refraction of −0.25 −0.50 × 170 (OD) and −0.25 Sph (OS). She continued regular follow-ups with her psychiatrist and nutritionist.

## Discussion

AN is a psychiatric eating disorder that may indirectly affect visual outcomes after corneal refractive surgery. Patients with AN are more likely to develop dry eye than the general population, with a reported 1.64 times higher risk of dry eye disease among those with eating disorders.[18] This is potentially caused by systemic dehydration among patients with AN, causing intravascular volume depletion to reduce tear production. This is compounded by the fact that there is high comorbidity with depression,[19] and several of the patients with AN in Gilbert et al's study were taking tricyclic antidepressants, which are also known to cause dry eye due to their anticholinergic side effects.[20] Dry eye can result in poor candidacy for corneal refractive surgery since decreased tear production affects wound healing,[21,22] causing unpredictable visual and refractive outcomes.[23] Approximately 20–55% of refractive surgery patients report persistent dry eye symptoms,[24] which can be further exacerbated if the patient initially had reduced tear production. Orbital fat wasting and consequent lagophthalmos also expose the eye to external contaminants such as air, pollution, and other irritants,[8] which may compromise the stability of the ocular surface, affect epithelial healing, or impact the integrity of the flap architecture.[25]

Episcleral capillary aneurysms and subconjunctival hemorrhages were also observed in eyes of patients with AN, which is speculated to be caused by a deficiency in essential fatty acids and vitamin E, which reduces vascular endothelial integrity.[26] However, this finding was not present in patients who were bulimic, suggesting that patients with AN may have an underlying microvascular fragility that makes them particularly susceptible to these aneurysms and hemorrhages.[7] The presence of episcleral aneurysms may increase the risk of perioperative bleeding complications such as limbal hemorrhages and significant subconjunctival hemorrhages during corneal refractive surgery.

Cataracts have also been reported in several cases of AN, and although cataracts have not been extensively studied in patients with AN, there are theories that cataracts may be induced by deficiencies in vitamin C, carotenoid, or retinol.[27] There have also been reports of cataract formation in hypoglycemic patients, possibly from lens opacification during a hypoglycemic attack.[28,29] Although many reports have been found in children, the mechanisms underlying cataract formation in this group could potentially explain hypoglycemic patients with AN. Additionally, patients who have undergone corneal refractive surgery reported symptoms of nighttime visual disturbances, such as glare and halos.[30] As nighttime glare sensitivity is also a finding in patients with AN,[7] these visual disturbances may be exacerbated after surgery.

In patients with any posterior segment abnormality, it is important to evaluate the cause of poor visual acuity, as this may not be corrected with refractive surgery. Furthermore, although patients with AN do not necessarily have a higher risk of diabetes, if a patient with AN presents with diabetes they have a higher chance of developing diabetic retinopathy[31] – therefore it is crucial to be attentive to this finding on fundus examination. Additionally, actions such as the Valsalva maneuver may cause Purtscher-like retinopathy,[32] Thus, clinicians should be cautious of the presence of these ocular findings in patients with AN before recommending corneal refractive surgery.

Although orbital fat wasting is a manifestation of AN, orbital fat edema has also been infrequently reported. In AN, oxidative stress affects polyunsaturated fatty acids in cell membrane phospholipids, leading to increased lipid peroxidation, which contributes to the development of fat edema.[16] Orbital fat edema may be associated with proptosis or orbital cellulitis,[33,34] which in the setting of refractive surgery may increase risk of flap dislocation, poor epithelial healing, or complications of the ocular surface.[25,35]

Several patients with AN from our literature search presented with SWJs, small conjugate saccadic eye movements that interrupt eye fixation.[36] Although the mechanisms underlying SWJs are unclear, patients with diseases such as

Friedreich's ataxia (FA), spinocerebellar ataxia (SCA), and Langerhans cell histiocytosis (LCH) may present with SWJs, suggesting a potential neurological etiology.[37] Given that cerebral atrophy and volume loss can be observed in patients with AN,[38] SWJs should be considered when evaluating a patient with AN for corneal refractive surgery. Despite improved eye-tracking technology for newer excimer lasers, SWJs may pose a risk of laser fixation loss at the time of ablation treatment.

The ocular manifestations of AN have not been extensively documented; thus, it is worth considering the additional systemic manifestations of AN and their effects on corneal refractive surgery. One complication of AN is delayed wound healing.[3] Wound healing has an important effect on the outcome of corneal refractive surgery; therefore, clinicians need to consider these conditions in the context of patients with AN. Contrary to popular belief, patients with AN do not show a higher predisposition to more frequent infectious diseases, but the usual signs of infection (fever and elevated white blood cell count) are sometimes not present; therefore, it is imperative that clinicians are vigilant in evaluating infections.[3,39]

It should also be noted that there are myriad other nutritional deficiencies in patients with AN that could affect eye health. For example, polyunsaturated fatty acids play a large role in increasing corneal epithelial integrity, tear production, and controlling ocular surface inflammation.[40] Hence, impaired tear production and reflex blinking can result in spontaneous epithelial breakdown, impaired wound healing, and corneal ulceration.[41] Additionally, vitamin A deficiency can cause ocular surface changes, such as decreased goblet cells, xerophthalmia, and corneal punctate keratopathy.[42–44] Low levels of vitamins $B_{12}$, C, and D can all contribute to dryness,[45] which is a major factor in corneal refractive surgery.

Finally, according to the Preferred Practice Protocols (PPPs) of the American Academy of Ophthalmology, psychological characteristics affect patient satisfaction with LASIK, with the presence of a personality disorder or a history of depression or anxiety as predictors for poor psychological or psychosocial outcomes after cosmetic surgeries.[46–48] As of 2020, the estimated incidence rate of completed suicide in individuals undergoing laser refractive surgery in the United States is 7 per 100,000,000 individuals, while the incidence rate of psychiatric complications like psychosis, depression, and suicide ideation in individuals undergoing laser refractive surgery in the United States is 4 per 10,000,000 individuals.[49] Likewise, both corneal refractive surgery and AN can exacerbate dry eye syndrome, which was found to be associated with suicidal ideation at an odds ratio of 1.24.[49] Thus, due to the high comorbidity of depression in patients with AN,[19] it is recommended that these patients are evaluated for psychological stability. Clinicians should consider these factors before performing surgery on these individuals and increase vigilance in monitoring for symptoms.

When considering the most pertinent complications of AN, it is vital that clinicians thoroughly screen patients before surgery. When encountering an apparently underweight patient, BMI must be assessed to determine appropriate preoperative recommendations (Figure 1). If BMI is >18.5, typical corneal refractive surgery guidelines may be followed. If BMI is ≤18.5, the patient must be questioned regarding a prior or current history of AN. If the patient denies a diagnosis of AN, social history and the SCOFF questionnaire must be obtained from the patient (Table 1).[50,51] Answering "yes" to ≥2 answers on the SCOFF questionnaire is considered abnormal. If the SCOFF screen is negative and other wasting conditions, such as malignancy or malnutrition, are suspected, referrals to appropriate providers should be made. If the diagnosis of AN is confirmed by the patient or if the SCOFF questionnaire result is abnormal, the patient should be given a psychiatric referral. Similarly, if a patient is severely underweight (BMI: 15—15.9),[52] urgent psychiatric referral and evaluation are required. If the patient is either moderately (BMI: 16–16.9) or mildly (BMI: 17–17.9) underweight,[52] an ophthalmic workup should be completed (Table 2). If the results of the ophthalmic workup are abnormal, the origin of the abnormality should be determined and surgery should be reconsidered. If the results of the ophthalmic workup were normal, the patient should undergo a medical workup (Table 2). If the outcome of the medical workup is abnormal, those irregularities should be addressed and surgery should be considered at a later time. If the outcome of the medical workup is normal, the patient should undergo a typical preoperative evaluation examination for corneal refractive surgery.

The current study is primarily limited by the lack of existing research on patients with AN who have undergone corneal refractive surgery. Further studies analyzing this relationship are warranted to provide more correlational data on the direct implications of AN. This study was limited by the number of studies on patients with AN and the number of subjects in each study. It is difficult to conduct investigations in this population because of the health concerns

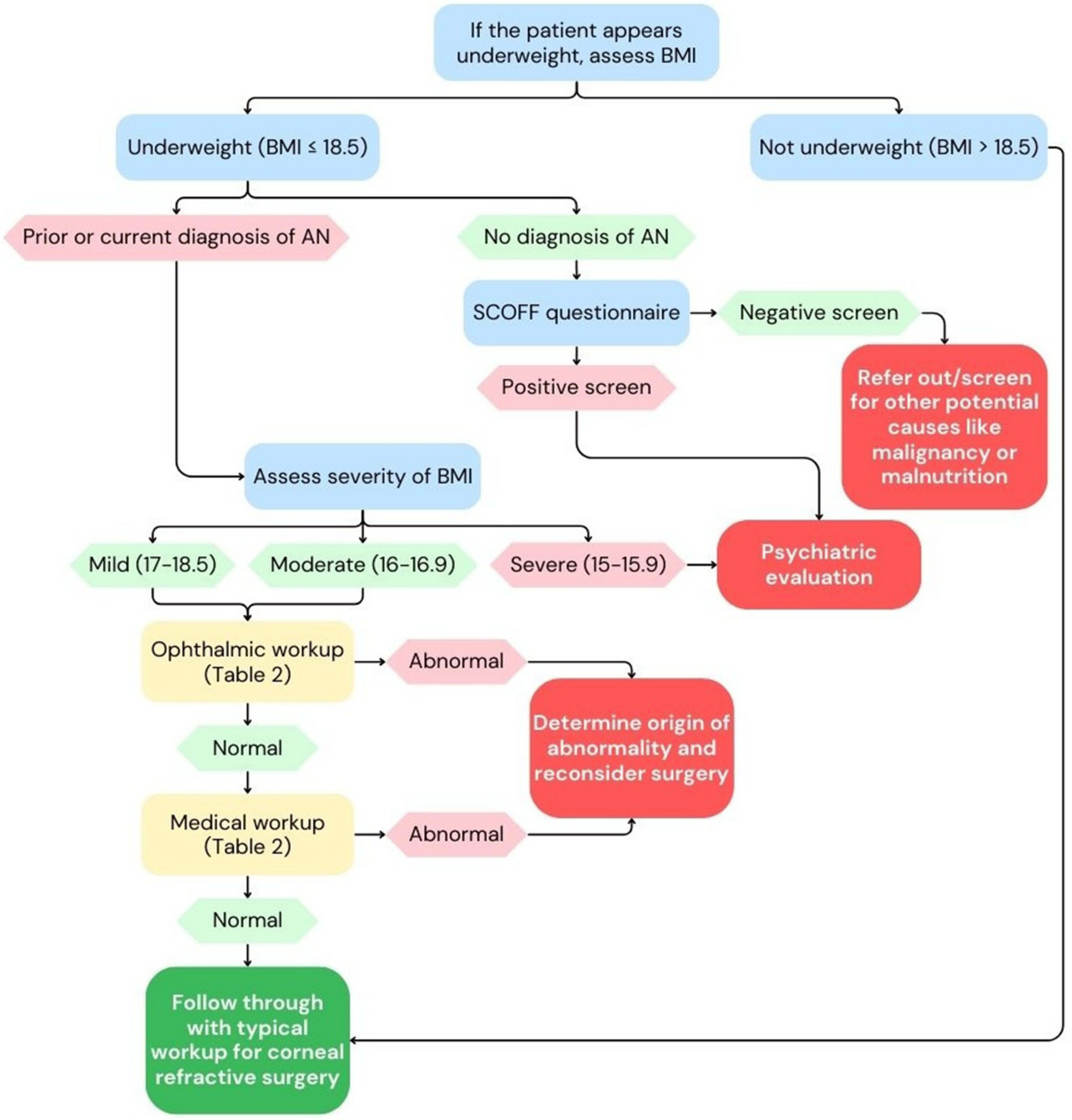


**Figure 1** Preliminary preoperative guidelines for patients with AN presenting for corneal refractive surgery consultation.

surrounding the subjects and the relative rarity of the illness. Additionally, there could have been insufficient data reported by the authors of the articles found in the literature search. For example, articles describing patients with AN with posterior segment abnormalities did not report any occurrences of dry eye; however, these patients could have had this manifestation. Lastly, it should be emphasized that AN may not necessarily be present in severely emaciated patients. Therefore, this review was based on the clinician's discretion. However, realizing that there are limitations in the literature, there is still the possibility of encountering a patient with low BMI seeking refractive surgery. Therefore, clinicians should be aware of these uncommon situations.

**Table 1** Subjective Screening Items for an AN Patient Considering Corneal Refractive Surgery

| Relevant Patient History | Questions |
|---|---|
| General[3] | Changes in dietary habits?<br>Changes in weight?<br>Bloating or changes in bowel movements?<br>Dizziness, fainting, or fatigue?<br>Experiencing any seizures?<br>Intolerance to cold temperatures?<br>Signs of hair loss?<br>Irregular/absent menses?<br>Signs of easy bruising or non-healing wounds?<br>Dry skin or fine, soft hair (lanugo) on your face or back? |
| Ocular[50] | OSDI or SPEED questionnaire<br>Nighttime visual disturbances? Glare?<br>Trouble driving at night?<br>Red spots or bleeding in the white of your eyes?<br>Peripheral vision loss?<br>Swelling or redness around your eyes?<br>Episodes of your eyes protruding?<br>Has anyone said you sleep with your eyes slightly open?<br>Are your eyes drier upon awakening? |
| SCOFF (**S**ick, **C**ontrol, **O**ne stone, **F**at, **F**ood) questionnaire[51]<br>(One stone = 14 lb) | Do you make yourself **S**ick because you feel uncomfortably full?<br>Do you worry that you have lost **C**ontrol over how much you eat?<br>Have you recently lost more than **O**ne stone (14 lb) in a 3-month period?<br>Do you believe yourself to be **F**at when others say you are too thin?<br>Would you say that **F**ood dominates your life? |

**Abbreviations**: OSDI, ocular surface disease index; SPEED, Standard Patient Evaluation of Eye Dryness.

**Table 2** Objective Screening Items for an AN Patient Considering Corneal Refractive Surgery

| Medical workup | Potential Findings[3] |
|---|---|
| Complete blood count (CBC) with differential | Normocytic normochromic anemia<br>Leukopenia:<br>Decreased lymphocytes or neutrophils<br>Thrombocytopenia |
| Comprehensive metabolic panel (CMP) | Hyponatremia<br>Hypokalemia<br>Metabolic acidosis (low bicarbonate)<br>Hypocalcemia<br>Hypophosphatemia<br>Hypoglycemia<br>Hypoalbuminemia<br>Elevated BUN/Cr ratio |
| Hormone Panel | Decreased TSH, T3, T4<br>Decreased FSH, LH, estrogen, testosterone<br>Elevated GH, decreased IGF-1<br>Increased ACTH, cortisol |

(*Continued*)

**Table 2** (Continued).

| | |
|---|---|
| Nutrition panel | Deficiencies in:<br>Polyunsaturated fatty acids<br>Vitamin A, B12, C, D<br>Selenium, Lactoferrin, Zinc, Copper |
| **Ophthalmic workup** | **Potential Findings[7,11,17]** |
| Observations | Lagophthalmos<br>Saccadic eye movements (SWJs) |
| Slit lamp | Superficial punctate keratopathy<br>Cataracts (PSCs)<br>Conjunctival squamous metaplasia<br>Episcleral capillary aneurysms and subconjunctival hemorrhages<br>Abnormal corneal staining<br>Decreased Schirmer test and TBUT scores |
| Fundus | Thinning of:<br>RNFL<br>Macula<br>Fovea<br>Purtscher-like retinopathy |

**Abbreviations**: BUN, blood urea nitrogen; Cr, creatinine; TSH, thyroid stimulating hormone; FSH, follicle stimulating hormone; LH, luteinizing hormone; GH, growth hormone; IGF-1, insulin-like growth factor 1; ACTH, adrenocorticotropic hormone; SWJ, square wave jerk; PSC, posterior subcapsular cataract; TBUT, tear break-up time; RNFL, retinal nerve fiber layer.

## Conclusion

In conclusion, AN patients with a BMI of 15–15.9 require urgent psychiatric referral. For those with a BMI between 16 and 17.9, an ophthalmic and medical workup should be performed. If abnormalities are found, the cause should be identified, and surgery reconsidered. If both the ophthalmic and medical workups are normal, the patient can proceed with the standard preoperative evaluation for corneal refractive surgery. However, each individual presents with different symptoms and their health must be examined holistically. Assumptions cannot be made that thinner patients have AN, and clinicians must be cognizant that not every patient with low BMI has a psychiatric eating disorder. Thus, clinicians are encouraged to seek appropriate consultations from other medical professionals, psychiatrists, and primary care physicians to gain a more comprehensive understanding of patient health and history. It is ultimately the clinician's decision whether they decide to perform the elective surgery. The authors hope that this study will serve as a stepping stone for future research in collaboration with other medical disciplines to provide more comprehensive guidelines for this patient population.

## Abbreviations

AN, anorexia nervosa; DSM-5, Diagnostic and Statistical Manual of Mental Disorders, 5th edition; BMI, body mass index; LASIK, laser-assisted in situ keratomileusis; PRK, photorefractive keratectomy; SMILE, small incision lenticule extraction; RNFL, retinal nerve fiber layer; PSC, posterior subcapsular cataract; OCT, optical coherence tomography; SWJ, square wave jerk; FA, Friedreich ataxia; SCA, spinocerebellar ataxia; LCH, Langerhans cell histiocytosis; PPP, Preferred Practice Protocol.

## Disclosure

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